Washington Aqueduct

U.S. Army Corps of Engineers

Water Quality Report July 2003

Knowing and protecting your water supply is a team effort Approach.

The source of your drinking water is the Potomac River. The Potomac watershed produces an abundant supply of water for your use, but public involvement will be the key to keeping unwanted runoff of soil and contaminants from damaging the quality of our source water. Washington Aqueduct in concert with the other metropolitan Washington Area water utilities, will be working with other public agencies to protect the source water.

Water Aqueduct Service Area

As you can see on the map above the Potomac River water is withdrawn at Great Falls and Little Falls and processed at one of our two treatment plants in the District of Columbia. The Dalecarlia and McMillan Water Treatment Plants produce water of similar quality. It is distributed to the Washington Aqueduct service area shown in yellow. In order to ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations that limit the amount of certain contaminants in water by public water systems. The Washington Aqueduct monitors both the source and its finished water and uses a multi-level approach with controls on physical access, chemical storage and process systems in order to safeguard your daily water.

Update on Water Quality

Washington Aqueduct welcomes this opportunity to provide you with our Annual Water Quality Report for 2002

We value our customers and work hard to ensure your satisfaction. We take pride in providing you excellent quality water. There is a table in this report that highlights key EPA drinking water standards and matches our performance against them. In addition to these, we are pleased to report that we meet all EPA standards. We produce an average of 180 million gallons of water per day and have the capability to deliver whenever the quantity is needed to support your needs. In March 2003, EPA Region 3 issued Washington Aqueduct a new National Pollutant Discharge Elimination System (NPDES) Permit that will change the way the sediment we generate in the treatment process is collected and disposed of. This will be a major undertaking, and the public will have an opportunity for involvement as we select the preferred alternative. In this as in all of our undertakings, we strive to exceed customers' expectations of our product and service.

Thomas P. Jacobus
General Manager

Types of Water Contaminants

The EPA requires that the water quality report list the levels of all contaminants detected. As water travels over the surface of the land or through the ground, it can dissolve naturally occurring minerals and pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in the Potomac River water include:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
Inorganic contaminants, such as salts and metals, may be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
Organic chemical contaminants, including synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production, may come from gas stations, urban storm water runoff, and septic systems.
Radionuclide contaminants, may come from naturally occurring deposits or be the result of oil and gas production and mining activities.

Giardia and Cryptosporidium

Giardia and Cryptosporidium are microscopic parasites that occur in warm-blooded animals and can sometimes find their way into the water supply. Both parasites produce cysts that are very resistant to harsh environmental conditions. People can be exposed to both parasites from other people, animals, soils, drinking water, swimming pools, and food as well as any surface not sanitized after exposure to feces. Symptoms may range from mild diarrhea to incapacitating diarrhea, cramps, loss of appetite, weight loss, nausea, and low grade fever. Because reliable tests are not available for low levels of concentration, EPA does not require that finished water be tested if the raw water does not have concentrations that exceed 10 cysts per liter. The Washington Aqueduct provides a multi-barrier approach, chemical treatment, highly efficient filtration technology, and disinfection to inactivate or remove the parasites from the raw water and minimize the risk to public health. No method can guarantee 100 percent removal. In 2002, no Cryptosporidium was detected in the raw water. On two monthly tests, Giardia was detected at 0.6 and 1.7 cysts per liter in the raw water.

Quality Assurance Provides Safety and Protection

Your water is closely scrutinized for safety and quality every day of the year. The Washington Aqueduct treatment plants are staffed with highly trained, certified operators. Throughout the organization, dedicated administrative, engineering, and maintenance professionals work to ensure that the quality of your water is unsurpassed. During 2002, our laboratory analyzed 45,026 water samples for more than 125 different parameters. In addition, to completing the proficiency requirements mandated by the EPA, the laboratory conducts an internal quality control program. The result is analytical data in which you can have the highest degree of confidence. We are proud to be a member of the Partnership for Safe Water that was developed jointly by the EPA, the American Water Works Association, and the Association of State Drinking Water Administrators. In addition, Washington Aqueduct is coordinating with federal, state and local law enforcement as well as with utility and health organizations.

WATER QUALITY DATA TABLE

The table shows the results of our water quality analyses. Washington Aqueduct has consistently found that every regulated compound is either far below the limits established by EPA or is below detectable levels. None of the detectable regulated contaminants that are listed poses a health risk. The regulated contaminants detected in the drinking water get into the drinking water supplies through industrial discharge or spills, erosion of natural deposits, corrosion, sewage discharge, fertilizer runoff, and other sources. The Unregulated Contaminant Monitoring Rule (UCMR) requires that water providers test for the following compounds for one year to help determine the need for future regulations: 2,4 & 2,6 Dinitrotoluene, Acetochlor, DCPA mono & di-acid degradate, 4,4-DDE, EPTC, Molinate, Nitrobenzene, Perchlorate and Terbacil. The Washington Aqueduct monitored for the UCMR contaminants during 2002. None of the contaminants were detected. The Maximum Residual Disinfectant Level (MRDL) for Chloramine is 4 mg/L. We keep our disinfection levels near the upper limit to ensure maximum disinfection of microbial contaminants. We use chlorine as a primary disinfectant and chloramine as a secondary disinfectant. A chloramine residual is maintained in the distribution system until the water is consumed. The EPA requires water utilities to remove a percentage of the TOC from the raw water based on the TOC concentration and alkalinity of the raw water. During 2002, the Washington Aqueduct removed a minimum of 25 % more TOC than the EPA required. Many other substances were tested for but not included in the table because they were below EPA's minimum detection limit for reporting.

DALECARLIA AND MCMILLAN WATER TREATMENT PLANTS 2002 TEST RESULTS						
Contaminants	**MCLG/ MRDLG**	**MCL/ MRDL**	**Average**	**Minimum**	**Maximum**	**Likely Source in Drinking Water**
Arsenic (ppb)	N/A	50	ND	ND	0.6	Erosion or natural deposits.
Barium (ppm)	2	2	0.04	0.03	0.05	Erosion of natural deposits.
Chromium (ppb)	100	100	1.3	ND	3.0	Erosion of natural deposits.
Fluoride (ppm)	4	4	0.9	0.60	1	Additive to the water that promotes strong teeth.
Nitrate (ppm)	10	10	1.3	0.24	2.7	Runoff from fertilizer use.
Nickel (ppb)	N/A	N/A	1.1	0.9	2.0	Erosion of natural deposits.
Dalapon	200	200	1.1	ND	4.4	Runoff from herbicide.
2,4,D (ppb)	70	70	ND	ND	0.1	Discharge from steel metal, plastic and fertilizer factories.
Selenium (ppb)	50	50	0.7	ND	2.0	Erosion of natural deposits.
Alpha emitters (pCi/L)	0	15	ND	ND	2.1	Erosion of natural deposits.
Beta/photon emitters (pCi/L)	0	50	2.1	1.6	3.0	Decay of natural deposits.
TOC (mg/L)	N/A	TT	2.2	1.8	2.8	Naturally present in the environment.
Chloramines (mg/L)	4	4	3.6	3.38	3.72	Disinfectant used to treat water.
Turbidity (NTU)	N/A	TT	0.11	0.05	0.25	Soil runoff

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant that is allowed in drinking water.
Maximum Residual Disinfectant Level Goal (MRDLG) - The level of a disinfectant in drinking water below which there is no known or expected health risk.
N/A (Not applicable) : There is no regulatory limit.
ND (Non Detected) : Below Detection limit
NTU (nephelometric turbidity unit) - A measure of the clarity of water.
ppb- Part per billion, or microgram per liter (µg/L).
ppm - Part per million, or milligram per liter (mg/L).
pCi/L (Picocuries per Liter) : A measure of radioactivity.
Treatment Technology (TT) - A required process intended to reduce the level of a contaminant in drinking water.
Turbidity - A measure of the cloudiness of water caused by suspended particles.

Vulnerability to Contaminants

Your water quality report points out that some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Who Can I Call for More Information?

If you have questions relating to water treatment or source water, please contact:

http://washingtonaqueduct.nab.usace.army.mil

If you have questions relating to your retail service provider, please contact:

District of Columbia
DC Water and Sewer Authority
Department of Water Services
202-612-3434
http://www.dcwasa.com/

Arlington County
Department of Public Works
Water, Sewer and Streets
703-228-6578
http://www.co.arlington.va.us/dpw/

Falls Church
Department of Environmental Services
703-248-5070
http://www.ci.falls-church.va.us